

SEQUENCE LISTING

SEQ.ID.NO. 1 HG1018237N1 CLN00539416.a
ATGCTGACGCTCGGTGAACAGTTGCCCTGGTCACAAGATTAGAAGACACAGTGTCCAT
CCTCCCAGATTGGATCTCTTTCATATGGATCTCTGTTCTATGTCTTTAAAAAAAT
AACTTTTGGAACCTTTGGATTACAACGTTCATCCTCACCTATGCAAAGAAAGGGA
AGCTATTGCTGGGATTTGAGGAGATGGTCCTAGAACAAATTGGAGATTCATACGCACACA
AAGAACCTCAACCCTTACCTCACACCAAGACACAAAAGCTACCTCAAATAA

SEQ.ID.NO. 2 HG1018238N1 CLN00250082.b
ATGCTGACGCTCGGTGAACAGTTGCCCTGGTCACAAGATTAGAAGACACAGTGTCCAT
CCTCCCAGATTGGATCTCTTTCATATGGATCTCTGTTCTATGTCTTTAAAAAAAT
AACTTTTGGAACCTTTGGATTACAACGTTCATCCTCACCTATGCAAAGAAAGGGA
AGCTATTGCTGGGATTTGAGGAGGCAGTCGCTGCCACTGGCAGTATAAG

SEQ.ID.NO. 3 HG1018239N1 24980850:24980849
ATGGAGCCTTCGGGCAGTGAACAGTTAGGAGGACCTGATCCTGGAGGCAAATCCAA
GATGCAGAGGCCAGAAAGCAGACAGAACATCAGAACAAAAATTGCTAAATGACCCACAAT
GCTTTGGAGAACATTAACGTGATTGCCAAGGCTTGAAGCATCTCCAGCACCAGC
AGGAGGTATCAGTGTCTCACATGATGTTGAGCAATTAGGAGATCCAGAACCTGAA
ATGGATCTGAAAGCCAGAACGCATGTGCTGAGATTGATGGTGTCCCCACCCACCCACA
GCTCTGAATCGTGTCTGCAGCAGATTGAGTGCACCCAAAGATGAAGAGAGGGACAAGC
TTGCATAGTAGGCAGGGCAAGCCAGAGGCCAAAGGGAAGTCCCCAAATCAACAGGAAG
TCTGGTCAGGAGAGATGACAGCTTTATGCAAGTCAAGGCCACCCAGGTCTTCATCCACA
GATGCACCTACCGGCTCTGCTATGATGAAATAGCTTGTCTGCTGCTGCTGCTGCT
GCATGTCTACCAGGAGAGGAGGGAACTGCGGAGCGGATCGAACGGTTGAAAGTAAGCAGC
CTTGCACAAACATCCAGTGCAGTGCCTCCAGTACCGATGGCAGCATCCACACAGACTCT
GTGGATGGAACACCAGACCCTCAGCGCACAAAGGCTGCCATTGCTCACCTGCAGCAGAAG
ATCCTGAAGCTCACAGAACAAATCAAGATTGACAAACAGCCCCGGACGACAACGTTGCT
GAATACTTGAAGCTGCCAACAGTGCAGACAAACAGCAGGCTGCCCGCATCAAGCAAGTC
TTTGAGAAGAAGAACAGAAATCTGCCAAACTATCCTCCAGCTGCAAAAGAAACTTGAG
CACTACCACAGGAAGCTCAGAGAGGTAGAGCAGAATGGATCCCCGGCAGCCAAAGGAT
GTCTTCAGGGACATGCACCAAGGTCTGAAGGATGTAGGAGCAAAAGGTGACTGGCTTCAGT
GAAGGTGTGGGATAGTGTCAAAGGTGGTTTCCAGCTTCTCCAGGCCACCCATTCA
GCAGCAGGGCCTGTAGTCTCAAAGCCCAGAGAGATTGCTCACTCATTGGAACAAATT
GGCAGTGCAGACAAACATCCCCAACCTGAAGGACTCTTAGAGGAAGGGCAAGTGGATGAT
GCGGGGAAGGCTTGGGAGTGAATTCAAACCTTCAGTCTAGCCAAAATATGGTAGTGAA
GAAGATTGTTCTAGGCCACTTCAGGCTCAGTGGGAGCCAACAGCACCACAGGGGCATC
GCTGTAGGAGCATCCAGTCTCAAACAAACACCCTGGACATGCAAGGCTCAGGATTGAT
GCACTACTACATGAGATCCAGGAGATCCGGGAAACCCAGGCCAGACTAGAGGAATCCCTT
GAGACTCTCAAGGAACATTATCAGAGGGACTATTCTTAATAATGCAAGACCTTACAGGAG
GAGCGATATAGATGTGAACGATTGGAAGAACAGCTAAATGAGCTAACAGAGCTCCACCAAG
AATGAAATCTTGAACCTGAAGCAGGAACCTGGCAAGCATGGAAGAAAAAAATGGGTATCAG
TCCATGAACGGGCCGGACATCCAGGAGGCCCTGGAGGCATGCCAGACGGCATCTCC
AAGATGGAGCTGCAGCAGCAGCAGCAGGGTGTGCAGCTAGAACGGCTGGAGAACGCC
ACTGCCCGAACCTCTGGGAAACTCATCAACATCCTCTGGCTGTATGGCAGTCTT
TTGGTCTTGTCTCCACTGTAGCCAACCTGTTGAGGCTTCTGGAGGATGCAAGACTCGCAACAGG
ACGTTCAGCACCTTATTCCCTGGTTTATTGCCCTCTGGAAAGCACTGGACGCC
CTCTCAGCTATGTGGAACGGTTCTTCATCCCTAGATGA

SEQ.ID.NO. 4 HG1018248N1 CLN00219153.a
ATGGAAGAAAAATCGCGTATCAGTCTATGAAACGGGCCGGACATCCAGGAGGCCCTG
GAGGCATGCCAGAGCGCATCTCCAAGATGGAGCTGCAGCAGCAGCAGCAGGTGGTG
CAGCTAGAAGGGCTGGAGAACGCCACTGCCAGCAGCAGCAGCAGGTGGTG
CTCCTGGCTGTCACTGGCAGTCCTTGGCTTTGTCTCCACTGTAGCCAACCTGTTGTC
CCCCCTATGAAAGACTCGCAACAGGACGTTCAAGCACTTTATTCCCTGGTTTATGCC
TTCTCTGGAAAGCACTGGGACGCCCTTCAGCTATGTGGAACGGTTCTTCATCCCT
AGATGA

SEQ.ID.NO. 5 HG1018249N1 CLN00149041.a
ATGGAGCCTCGGGCAGTGAACAGTTATTGAGGGACCTGATCCTGGAGGCAAATCCAA
GATGCAGAGGCCAGAAAGCAGACAGAAATCAGAACAAAAATTGTCTAAAATGACCCACAAT
GCTTGAGAACATTAACGTATTGGCCAAGGCTTGAAGCATCTTCCAGCACCAAGC
AGGAGGTATCAGTGTCTCCACATGATGTGAGCAAATTCAAGGCAGATCCAGAACCTGAA
ATGGATCTGAAAGGCCAGAACGCATGTGCTGAGATTGATGGTGTCCCCACCCACCA
GCTCTGAATCGTGTCTGCAGCAGATTGAGTCAGTGCACCCAAAGATGAAGAGAGGGACAAGC
TTGCATAGTAGGCAGGGCAAGCCAGAGGGCCAAAGGGAAGTCCCCAAATCAACAGGAAG
TCTGGTCAGGAGATGACAGCTGTTATGCAGTCAGGCCACCCAGGTCTTCATGCCACA
GATGCACCTACCAGCTGTCTGATGGAAATAGCTTGTGCTGCTGCTGCTGCTGCT
GCATGTCTACCAGGAGAAATGCCACTGCCCAGAACCTCTGGGCAAACCTCATCAACATCC
TCCTGGCTGTATGGCAGTCTTTGGTCTTGTCTCCACTGTAG

SEQ.ID.NO. 6 HG1018250N1 24980850:24980849
ATGGAGCCTCGGGCAGTGAACAGTTATTGAGGGACCTGATCCTGGAGGCAAATCCAA
GATGCAGAGGCCAGAAAGCAGACAGAAATCAGAACAAAAATTGTCTAAAATGACCCACAAT
GCTTGAGAACATTAACGTATTGGCCAAGGCTTGAAGCATCTTCCAGCACCAAGC
AGGAGGTATCAGTGTCTCCACATGATGTGAGCAAATTCAAGGCAGATCCAGAACCTGAA
ATGGATCTGAAAGGCCAGAACGCATGTGCTGAGATTGATGGTGTCCCCACCCACCA
GCTCTGAATCGTGTCTGCAGCAGATTGAGTCAGGCCACCCAAAGATGAAGAGAGGGACAAGC
TTGCATAGTAGGCAGGGCAAGCCAGAGGGCCAAAGGGAAGTCCCCAAATCAACAGGAAG
TCTGGTCAGGAGATGACAGCTGTTATGCAGTCAGGCCACCCAGGTCTTCATGCCACA
GATGCACCTACCAGCTGTCTGATGGAAATAGCTTGTGCTGCTGCTGCTGCT
GCATGTCTACCAGGAGAGGGAGGGACTGCGGAGCGGATCGAACGGTTGGAAGTAAGCAGC
CTTGGCCAAACATCCAGTGCAGTGGCTCCAGTACCGATGGCAGCATCCACACAGACTCT
GTGGATGGAACACCAAGACCTCAGCGCACAAAGGCTGCCATTGCTCACCTGCAGCAGAAG
ATCCTGAAGCTCACAGAACAAATCAAGATTGCACAAACAGCCCCGGACGACAACGTTGCT
GAATACTTGAAGCTTGCACACAGTGCAGACAAACAGCAGGCTGCCATCAAGCAAGTC
TTTGGAGAAGAAGAACAGAAATCTGCCAAACTATCCTCCAGCTGCAAAAGAAACTTGAG
CACTACCACAGGAAGCTCAGAGAGGTAGAGCAGAAATGGGATCCCCGGCAGCCAAGGAT
GTCTTCAGGGACATGCACCAGGGCTGAAGGATGTAGGAGCAAAAGGTGACTGGCTCAGT
GAAGGTGTGGTGGATAGTGTCAAAGGTGGTTTCCAGCTTCTCCAGGGCAACCCATTCA
GCAGCAGGGCTGTAGTCTCAAAGCCAGAGAGATTGCCACTCTCATTGGAACAAATT
GGCAGTGCAGACAACATCCCCAACCTGAAGGACTCTTATGAGGAAGGGCAAGTGGATGAT
GCGGGGAAGGCTTGGGAGTATTCAAACCTTCAGTCTAGGCCAAACAGCACCACAGGGGCATC
GCTGTAGGAGCATCCAGCTCCAAAACAAACACCCCTGGACATGCAGAGCTCAGGATTGAT
GCACTACTACATGAGATCCAGGAGATCCGGGAAACCCAGGCCAGACTAGAGGAATCCTT
GAGACTCTCAAGGAACATTATCAGAGGGACTATTCTTAATAATGAGACCTTACAGGAG
GAGCGATATAGATGTGAACGATTGGAGAACAGCTAAATGACCTAACAGAGCTCCACCA
AATGAAATCTTGAACCTGAAGCAGGAACCTGGCAAGCATGGAAGAAAAAATGGTATCAG
TCCTATGAACGGGCCGGACATCCAGGAGGCCCTGGAGGCATGCCAGACGCGCATCTCC
AAGATGGAGCTGCAGCAGCAGCAGCAGCAGGGCTGCAAGCTAGAAGGGCTGGAGAATGCC
ACTGCCCGAACCTCTGGGAAACTCATCAACATCCTCTGGCTGTCACTGGCAGTGGCTT
TTGGCTTGTCTCCACTGTAGCCAACCTGTGCTGCTGCTTCACTGAAGAGACTCGCAACAGG
ACGTTCAAGCACTTATTCTTGTGGTTTATTGCCCTCTGGAAAGCACTGGGACGCC
CTCTCAGCTATGTGGAACGGTTCTTCTCCATCCCCTAGATGA

SEQ.ID.NO. 7 HG1018237P1 CLN00539416.a
MLTLGEQLPLVTRFRHSVHPPRLDLFFIWJFCFYVFLKNNFLGNLLDNCSSSPMQRKG
SYCWDFEEMVLEQLEIHTHTKNLNPYLPDTKATFK

SEQ.ID.NO. 8 HG1018238P1 CLN00250082.b
MLTLGEQLPLVTRFRHSVHPPRLDLFFIWJFCFYVFLKNNFLGNLLDNCSSSPMQRKG
SYCWDFEEAVRCHWAV

SEQ.ID.NO. 9 HG1018239P1 24980850:24980849
MEPSGSEQLFEDPDPGGKSQDAEARKQTESEQKLSKMTHNALENINVIGQGLKHLFQHQ
RRSSVSPHDVQQJQADPEPEMDLESQNACAEJDGVPTHPTALNRVLQQJRVPKMKRGTS
LHSRRGKPEAPKGSPQINRKSGQEMTAVMQSGRPRSSSTTDAPTGSAMMEIJACAAAAAA

ACLPGEEGTAERIERLEVSSLAQTSSAVASSTDGSIHTSDVGDTPDPQRTKAAIAHLQQK
 ILKLTEQIKIAQTARDDNVAEYLKLANSADKQQAARIJKQVFEKKNQKSAQTILQLQKLE
 HYHRKLREVEQNGIPRQPKDVFDRDMHQGLKDVGAKVTGFSEGVVDSVKGGFSSFSQATHS
 AAGAVVSKPREIASLIRNKFGSADNIPNLKDSLEEGQVDDAGKALGVISNFQSSPKYGSE
 EDCSSATSGSGANSTGGIAVGASSSKNTLDMQSSGFALLHEIQEIRETQARLEESF
 ETLKEHYQRDYSLIMQTLQEERYRCERLEEQLNDTELHQNEILNLKQELASMEEKIAYQ
 SYERARDIQEALEACQTRISKMELQQQQQVVQLEGLENATARNLLGKLINILLA VMAVL
 LVFVSTVANCVVPLMKTRNRTFLVVFIAFLWKHWDALFSYVERFFSSPR

SEQ.ID.NO. 10 HG1018240P1 CLN00539416.a_nonTM_1
 MLTLGEQLPLVTRFRRHSVHPPRLDL

SEQ.ID.NO. 11 HG1018241P1 CLN00539416.a_nonTM_2
 NCSSPMQRKGSYCWDFEEMVLEQLEIHHTKNLNPYLPDTKATFK

SEQ.ID.NO. 12 HG1018242P1 CLN00250082.b_nonTM_1
 MLTLGEQLPLVTRFRRHSVHPPRLDL

SEQ.ID.NO. 13 HG1018243P1 CLN00250082.b_nonTM_2
 NCSSPMQRKGSYCWDFEAVRCHWAV

SEQ.ID.NO. 14 HG1018244P1 24980850:24980849_nonTM_1
 MEPSGSEQLFEDPDGGKSQDAEARKQTESEQKLSKMTHNALENINVIGQGLKHLFQHQR
 RRSSVSPHDVQQIQADPEPEMDLESQNACAEIDGVPTHPTALNRVLQQIRVPPKMKGTS
 LHSRRGKPEAPKGSPQINRKSGQEMTAVMQSGRPRSSSTTDAPTGSAMMEIACAAAAAAA
 ACLPGEEGTAERIERLEVSSLAQTSSAVASSTDGSIHTSDVGDTPDPQRTKAAIAHLQQK
 ILKLTEQIKIAQTARDDNVAEYLKLANSADKQQAARIJKQVFEKKNQKSAQTILQLQKLE
 HYHRKLREVEQNGIPRQPKDVFDRDMHQGLKDVGAKVTGFSEGVVDSVKGGFSSFSQATHS
 AAGAVVSKPREIASLIRNKFGSADNIPNLKDSLEEGQVDDAGKALGVISNFQSSPKYGSE
 EDCSSATSGSGANSTGGIAVGASSSKNTLDMQSSGFALLHEIQEIRETQARLEESF
 ETLKEHYQRDYSLIMQTLQEERYRCERLEEQLNDTELHQNEILNLKQELASMEEKIAYQ
 SYERARDIQEALEACQTRISKMELQQQQQVVQLEGLENATARNLLGKLIN

SEQ.ID.NO. 15 HG1018245P1 24980850:24980849_nonTM_2
 MKTRNR

SEQ.ID.NO. 16 HG1018246P1 24980850:24980849_nonTM_3
 DALFSYVERFFSSPR

SEQ.ID.NO. 17 HG1018248P1 CLN00219153.a
 MEEKIAYQSYERARDIQEALEACQTRISKMELQQQQQVVQLEGLENATARNLLGKLIN
 LLA VMAVLLVFVSTVANCVVPLMKTRNRTFLVVFIAFLWKHWDALFSYVERFFSSPR

SEQ.ID.NO. 18 HG1018249P1 CLN00149041.a
 MEPSGSEQLFEDPDGGKSQDAEARKQTESEQKLSKMTHNALENINVIGQGLKHLFQHQR
 RRSSVSPHDVQQIQADPEPEMDLESQNACAEIDGVPTHPTALNRVLQQIRVPPKMKGTS
 LHSRRGKPEAPKGSPQINRKSGQEMTAVMQSGRPRSSSTTDAPTSSAMMEIACAAAAAAA
 ACLPGEMPLPGTFWANSSTSSWLSWFWSLSPL

SEQ.ID.NO. 19 HG1018250P1 24980850:24980849
 MEPSGSEQLFEDPDGGKSQDAEARKQTESEQKLSKMTHNALENINVIGQGLKHLFQHQR
 RRSSVSPHDVQQIQADPEPEMDLESQNACAEIDGVPTHPTALNRVLQQIRVPPKMKGTS
 LHSRRGKPEAPKGSPQINRKSGQEMTAVMQSGRPRSSSTTDAPTGSAMMEIACAAAAAAA
 ACLPGEEGTAERIERLEVSSLAQTSSAVASSTDGSIHTSDVGDTPDPQRTKAAIAHLQQK
 ILKLTEQIKIAQTARDDNVAEYLKLANSADKQQAARIJKQVFEKKNQKSAQTILQLQKLE
 HYHRKLREVEQNGIPRQPKDVFDRDMHQGLKDVGAKVTGFSEGVVDSVKGGFSSFSQATHS
 AAGAVVSKPREIASLIRNKFGSADNIPNLKDSLEEGQVDDAGKALGVISNFQSSPKYGSE
 EDCSSATSGSGANSTGGIAVGASSSKNTLDMQSSGFALLHEIQEIRETQARLEESF
 ETLKEHYQRDYSLIMQTLQEERYRCERLEEQLNDTELHQNEILNLKQELASMEEKIAYQ

SYERARDIQEALEACQTRISKMELQQQQQQVVQLEGLENATARNLLGKLJNILLA VMAVL
LVFVSTVANCVVPLMKTRNRTFSTLFLVVFIAFLWKHWDALFSYVERFFSSPR

SEQ.ID.NO. 20 HG1018251P1 CLN00219153.a_nonTM_1
MEEKJAYQSYERARDIQEALEACQTRISKMELQQQQQQVVQLEGLENATARNLLGK

SEQ.ID.NO. 21 HG1018252P1 CLN00219153.a_nonTM_2
NCVVPLMKTRNRTF

SEQ.ID.NO. 22 HG1018253P1 CLN00219153.a_nonTM_3
ERFFSSPR

SEQ.ID.NO. 23 HG1018254P1 CLN00219153.a_altTM_1
ILLAVMAVLLVFVSTVANCVVPL

SEQ.ID.NO. 24 HG1018255P1 CLN00219153.a_altTM_2
TESTLFLVVFIAFLWKHW

SEQ.ID.NO. 25 HG1018256P1 CLN00219153.a_altnonTM_1
MEEKJAYQSYERARDIQEALEACQTRISKMELQQQQQQVVQLEGLENATARNLLGKLIN

SEQ.ID.NO. 26 HG1018257P1 CLN00219153.a_altnonTM_2
MKTRNR

SEQ.ID.NO. 27 HG1018258P1 CLN00219153.a_altnonTM_3
DALFSYVERFFSSPR

SEQ.ID.NO. 28 HG1018259P1 24980850:24980849_nonTM_1
MEPSGSEQLFEDPDGGKSQDAEARKQTSEEQKLSKMTHNALENINVJGQGLKHLFQHQQR
RRSSVSPHDVQQIQADPEPEMDLESQNACAEIDGVPTHPTALNRVLQQIRVPPKMKGTS
LHSRRGKPEAPKGSPQINRKSGQEMTA VMQSGRPRSSSTTDAPTGSAMMEJACAAAAAAA
ACLPGEEGTAERIERLEVSSLAQTSSAVASSTDGSIHTDSVDGTPDPQRTKAJIAHLQQK
ILKLTEQIKJAQTARDDNVAEYLKLANSADKQQAARIKQVFEKKNQKSAQTIQLQKKE
HYHRKLREVEQNGIPRQPKDVFVRDMHQGLKDVGAKVTGFSEGVDVSKGGFSSFSQATHS
AAGAVVSKPREIASLRNKFGSADNPNLKDSLEEGQVDDAGKALGVISNFQSSPKYGSE
EDCSSATSGSGVGANSTGGAVGASSSKNTLDQMSSGFALLHEIQEIRETQARLEESF
ETLKEHYQRDYSLIMQTLQEERYRCERLEEQLNDTELHQNEILNLKQELASMEEKJAYQ
SYERARDIQEALEACQTRISKMELQQQQQQVVQLEGLENATARNLLGKLIN

SEQ.ID.NO. 29 HG1018260P1 24980850:24980849_nonTM_2
MKTRNR

SEQ.ID.NO. 30 HG1018261P1 24980850:24980849_nonTM_3
DALFSYVERFFSSPR

SEQ.ID.NO. 31 HG1018237N0 CLN00539416
TAGAACCATGGGTGGGGACAGTCGTGAGGGAGCGTGGCCTGGCGGCCAGCGGGACGGGG
GCCTGGCCTCCGCTCGCGGCCCTGTGGGGCTGGGACCTGGCGTGGCCCCCGTTCGAGGT
TGAAGCCCCGGCTAGGACTCGACCCCCAGCATCCCACGGGGCCTCTTCCCTTTCCCG
CTCATTCCGCTGTCACTTGACCTGGGGCTCCAGCCCCCTGGCTCGTTCCCTTC
CAGCATCCCAGGGCCGAGGTATTAATCTCTGGAGAAAGACACATCCACAGTTAGCACTTC
TTCAGATGCTGACGCTCGGTGAAACAGTTGCCTTGGTCACAAGATTAGAAGACACAGTG
TCCATCCTCCCAGATTGGATCTCTTTCATATGGATCTCTGTTCTATGTCTTTAA
AAAATAACTTTGGAAACCTTTGGATTACAACGTTCATCCTCACCTATGCAAAGAA
AGGAAGCTATTGCTGGATTGAGGAGATGGCCTAGAACAAATTGGAGATTCAACGC
ACACAAAGAACCTAACCCCTACCTCACACCAGACACAAAAAGCTACCTCAAATAAAATCA
TAGGCCTAACCTGAAGAGCTAAACCATGCAACTCCAGAAAAGTTTTGTCAAGAAAGAAAA
TACAGGAGAAAATCTTAGTGAACCTGGGGTAGGCAAAGATTCTTAAGACACAAAAAGCA
TGAAGTATAAGGGAAAAAAATCGCTAAATTGGATTCTAACCTAACCTTTAAT
CTTGAAAGATAACCTTAAAGAAAATG

SEQ.ID.NO. 32 HG1018238N0 CLN00250082
 GGTGGTTGGGGGATGGACCGGGTGCAGCGCCGAGTGGAAAGGAGCAGGCCTTGAGC
 TCGAGCGACGGCGTGGCGAGACGCCGGCTGCTCTCCCTCCCCGCGGTATTAACT
 CTGGAGAAGACACATCCACAGTTAGCACITTCAGATGCTGACGCTCGGTGAACAGTT
 GCCTTGGTCACAAGATTAGAAGACACAGTGTCCATCCTCCCAGATTGGATCTCTTT
 CATATGGATCTCTGTTCTATGTCTTTAAAAAAATAACTTTGGGAAACCTTGTGGA
 TTACAACGTTCATCCTCACCTATGCAAAGAAAGGGAGCTATTGCTGGGATTTGAGGA
 GGCAGTCGGTGCACGGCAGTATAGATATGTTGTCAGCCTGCCATCACTGGACGT
 AGTTAAGGTGGATGCTTGTCCAGTCTGCTGCCACTGGCTGTATGTAAGGAGGTCTTC
 TGCCACCCCCACCGCTACTGGACTCTCTCCCTGTAGATGGCTTAGAACAAATTGGAGAT
 TCATACGCACACAAAGAACCTCAACCCCTACCTCACACCAGACACACAAAGCTACCTCAA
 ATAATCATAGGCCTAACCTGAAGAGCTAAAACCATGCAACTCCAGAAAGTTTGTCA
 AAAGAAAATACAGGAGAAAATCTTAGTGAACCTGGGGTAGGCAAAGATTCTAACAGAC
 AAAAGCATGAAGTATAAAGGGGAAAAATCGCTAAATTGGATTCTACCAAGTTAAAAA
 CTTTAATCTTGAAGATACTTTAACGAAAGTACCTTAAGAAAATGAAAAGTACGCCCTGGGCTGGGAGAA
 AATATTGCAAGAACGGTGTGCTGACAGAGGATGTATAGAACATATAAGAATTGTA
 ACTCAAGAATTGAAAGACAACCCATAAGAAAAGGGGAAACAATTGAAATAAGTTCAT
 CAAAGAATATAATGGCAAATAAGCACATGAAAAGATGCCAAAGTCGTAAAGTCATTAGG
 GAAATATAATTTAACCATAATGAGATACCAACTGCATACTGCCAGAACATGGCTGTAATG
 AATAGGATTAGTCACATGGTACAAGAATGGAGGATCATGGAAACTCTCATACACTGAC
 GATAGGAATGTGAAATGGATCAACTACTGGAGACAATTGGCAGTTCTTCAAAGT
 AAATGTGAAAGATGCCATACGATTCTACATTCCATTCTAATTATTCAAGAGAAATGAAA
 CTGTATATCCACAAAAAGACTTGTACACAAACATTACAGCAGCTATTATTATTGGTA
 ATAGCTAAAACAGCTCCATATCCATCAAGTGTATGGATAAACAAATTGGT
 GTATTATACAATGGAATACTACTCGGCAATAAAAGAACAGTTGATACCTCAACAAACC
 TAGATGGACCTCAAATAATTGGTTAATGAATGAAGCCAACCTAACAGAGTACATT
 GTATGTAATTGGAGAACTAACCTCTGCAATAGATTAAAGCACTATTAGGAGCATATG
 ACTTAAACAGTTTAAAAGTCAGGGAGTAAGTATGCTAAATAAAACAAATTCTGTGAA
 ACAAAATCTCTGAATTATTACTTCACGGACACTCTAACCTGACCATATTCTGACTT
 TAATGTAACTCACTCTATTCCGTAGTCACATGTTGCTGCTATTGGTACACATTACA
 TTTATTAGCATCTGCTTGAGCCAAGGCAGTGTAACTACATGTTTTAGTTACCTAC
 TTTGTAAGTCCTGTTCTTGGCTACATGATTACAGTAAACATAGGAAGTTAATA
 AAACAATTTCATGACC

SEQ.ID.NO. 33 HG1018239N0 24980850:24980849

GACACAGTGTCCATCCTCCCAGATTGGATCTCTTTCATATGGATCTCTGTTCTATG
 TCTTTAAAAAAATAACTTTGGAAACCTTGGATTACAACAGTTGCTCATCCTCACCTA
 TGCAAAGAAAGGGAGCTATTGCTGGGATTGGAGCTTCTCAAAGGATTGTACA
 CCTAGAGAGTCTAACCGAAGAGTGTAGAACATAGGCATGAAAGCTTCGTCTCACAGCTG
 CATCGTAGTCAGTGTGAAAGCAAATGCCAACCTAAATTGACACTCTGGTGTGTTAAA
 AAATTTTTGAGTTGCAAATAAGCATATTAAAGTCTACTGATGGAGCCTTGGGAGTGG
 AACAGTTATTGAGGACCTGATCCTGGAGGCAAATCCAAGATGCAAGAGGCCAGAAAGC
 AGACAGAACATCAGAACAAAATTGTCTAAATGACCCACAATGCTTGGAGAACATTAACG
 TGATTGGCCAAGGCTGAAGCATCTCCAGCAGCAGGCCAGGGTCATCGTGTCTC
 CACATGATGTGCAAGCAAATTAGGCAGATCCAGAACCTGAAATGGATCTGGAAAGCCAGA
 ACGCATGTGCTGAGATTGATGGTGTCCCCACGCACCCACAGCTCTGAATCGTGTCTGC
 AGCAGATTGAGTGCACCCAAAGATGAAGAGAGGGACAAGCTGCAATGTTAGGGGGCA
 AGCCAGAGGCCAACAGGAAGTCCCCAAATCAACAGGAAGTCTGGTCAGGAGATGACAG
 CTGTTATGCAAGTCAGGCCACCCAGGTCTCATCCACAACTGATGCACTACCGGCTCTG
 CTATGATGAAATAGCTTGTGCTGCTGCTGCTGCTGCTGCTACCACTGGAGAG
 AGGAACTGCCAGCGGATCGAACGGTTGGAAAGTAAGCAGCCCTGCCAACATCCAGTG
 CAGTGGCCTCCAGTACCGATGGCAGCATCCACACAGACTCTGTGGATGGAACACCAAGACC
 CTCAGCGCACAAGGCTGCCATTGCTCACCTGCAAGCAGAACAGTCTGAAGCTCACAGAAC
 AAATCAAGATTGCAACAAACAGCCGGGACGACAACGTTGCTGAATACCTGAAAGCTTGGCA
 ACAGTGCAGAACAAACAGCAGGCTGCCCATCAAGCAAGTCTTGGAGAACAGCAG
 AATCTGCCAAACTATCCTCCAGCTGCAAAGAAACTTGAGCACTACCAACAGGAAGCTCA
 GAGAGGTAGAGCAGAATGGGATCCCCCGCAGCCAAGGAGATGCTTCAAGGGACATGCACC
 AGGTCTGAAGGATGTAGGAGCAAAGGTGACTGGCTTCAGTGAAGGTGTGGATAGTG
 TCAAAGGTGGTTTCCAGCTCTCCAGGCCACCCATTAGCAGCAGGCCGCTGTAGTCT

CAAAGCCCAGAGAGATTGCCTCACTCATTGGAAACAAATTGGCAGTGCAGACAAACATCC
 CCAACCTGAAGGACTTTAGAGGAAGGGCAAGTGGATGATGCCGGAAAGGCTTGGGAG
 TGATTTCAAACTTCACTGCTAGCCAAAATATGGTAGTGAAGAAAGATTGTCTAGTGC
 CTTCAGGCTCAGTGGGAGCCAACAGCACCACAGGGGGCATCGCTGTAGGAGCATCCAGCT
 CCAAAACAAACACCCTGGACATGCAGAGCTCAGGATTGATGCACTACTACATGAGATCC
 AGGAGATCCGGAAACCCAGGCCAGACTAGAGGAATCCTTGAGACTCTCAAGGAACATT
 ATCAGAGGGACTATTCTTAATAATGCA-GACCTAACAGAGCTCCACCAGAATGAAATCTTG
 GATTGGAAGAACAGCTAAATGACCTAACAGAGCTCCACCAGAATGAAATCTTG
 AGCAGGAACGGCAAGCATGGAAGAAAAAATCGCTATCAGTCTATGAACGGGCCCCGG
 ACATCCAGGAGGCCCTGGAGGCATGCCAGACGCCATCTCAAGATGGAGCTGCAGCA
 AGCAGCAGGGTGCAGCTAGAAGGGCTGGAGAATGCCACTGCCGGAACCTCTGG
 GCAAACTCATCAACATCCTCTGGCTGTATGGCAGTCTTGGTCTTGTCTCCACTG
 TAGCCAACGTGTGGTCCCCCTCATGAAGACTCGAACAGGACGTCAGCACITTA
 TTGTGGTTTTATTGCTTCTGGAAAGCACTGGACGCCCTCTCAGCTATGTGGAAAC
 GGTCTTCTCATCCCCTAGATGATGCTGGCACAGAAGGCATTGTTCCCTACCCCTGGCG
 AGTGCATGCAGCAGAGGTAGACAGCAACTTACCTACTCTGAAGTTCTACAACAAAA
 AAAGAGTTGACTGAATCTGTTACATTAGAATAATGTTTTCTCAAGAGACGCAAT
 TGCAATAGTATTTTATGATTATCCAAGAACAGTTTTGGCGAAATCTGGATCA
 TTTATGTAGCATGATTTCTGGATGCAAATCTAAACAGTCCTTAAATATGAACCA
 ACAATCTGGAGCACACCGAACGGCAATCTAAATTGTGGCTGAAGGACTGCACTAAA
 CACTAAAAAGATGCAAAACCTGATGAGGGCAAACCAGTTAACCTAACACCCCTGCC
 TCTGGGCTCATCACCTCTCCATCCAGACTAACTTACTGTGAAATGCTACCA
 CATGTCGAATTGGATTGGGATTCGGGTTGGATTTCGTTGTCC

SEQ.ID.NO. 34 HG1018247N0 227356_at

AAAACGTAAACAGCTCCATATCCATCAAGTGTATGGATAAAACAAATTGGTGTATTTA
 TACAATGGAATACTACTCGGCAATAAAAAGAACAGTTGATACTCTCAACAAACCTAGATGG
 ACCTAAAATAATTGGTTTAATGAATGAAGGCCAACTTAAGAAGAGTACATTGTATGTA
 CTTGGAGAACTAATTCTGCAATAGATTAAAGCACTATTAGGAGCATATGACTTAAA
 CAGTTTTAAAAGTCAGGGAGTAAGTATGCTTAAATAAAACAAATCTGTGAAACAAATC
 TCTGAATTATTACTCACTCACTGGACACTCTAACCTGACCATATTCTGACTTTAATGTA
 ACTCACTCTTATTCCGTAGTCACATGTTGCTGTCAATTGGTTCACATTACATTATTC
 AGCATCTGCTTGAGCCAAGGCACTGTAACATGTTTTAGTTACCTACTTTGTA
 AGGTCTGTTCTTGGTACATCTGATTACA

SEQ.ID.NO. 35 HG1018248N0 CLN00219153

GAAGGCAGTATAGAGACTCCTATCAAGGATAAAGAAGAACTAAATAGAGTTAGTAACAT
 CGTAAAAAAGGATGTGAACGATTGGAAGAACAGCTAAATGACCTAACAGAGCTCCACCA
 ATGAAATCTGAACTTGAAGCAGGAACCTGGCAAGCATGGAAGAAAAAAATCGGTATCAGT
 CCTATGAACGGGCCGGACATCCAGGAGGCCCTGGAGGGCATGCCAGACGCCATCTCCA
 AGATGGAGCTGCAGCAGCAGCAGCAGGAGGTGGTCAGCTAGAAGGGCTGGAGAACGCC
 CTGCCCGAACCTCTGGCAAACACTCATCAACATCCTCTGGCTGTCAATTGGCAGTCCTT
 TGGCTTTGCTCCACTGTAGCCAACCTGTGTGGTCCCCCTCATGAAGACTCGCAACAGGA
 CGTTCAGCACTTATTCTTGTTTTATTGCCCTCTGGAAAGCACTGGGACGCC
 TCTTCAGCTATGTGGAACGGTTTTCATCCCCTAGATGATGCTGGCACAGAACGGCATT
 GTTCCCTACCCCTGGCGAGTGCATGCAGCAGAGAGTTAGACAGCAACTTACCTACTCTG
 AAGTTCTACAACAAAAAAAGAGTTGAGTGAATCTGTTACATTAGAATAATGTTTT
 TTCTCAAGAGACGCAATTGCAATAGTATTTTATGATTTATCCAAGAACAGTTTTGG
 CGAAAATCTGGATCATTTTATGTAGCATGATTCTCTGGGATGCAAATCTAAAC
 GTCCTTAATATGAACCAACAACTGGAGCACACCGAACGGCAATCTAAATTGTGGCTTG
 AAGGACTGCACTAAAACCCACTAAAAAGATGCGAACACCTGATGAGGGCAAACCA
 ACCTAACACCCCTGCCCTGTCTGGCTCATCACCTCTCCATCCAGACTAACCTTACTG
 TGAATCCTACCACTCCATGTCGAATTGGATTGCTGGGCTGGATTTCGTTGTCCG
 TGGAGAACACATGGATCTCTGGCTTCTCACCCAAAGTTGGCCACTTACGCTAATCCT
 GGAAGTATGATCACTTTGAACCTGCCCTTAACCTGACGAGGATACAAAAGTGA
 ATCATCCCCAAAGGATCACTGCACAGTCTACTACAGTATTAAAGTAGCCCTCTAAA
 TACTTAATTAAAGCAAATCCCTGGCCGACTTTAAGGTTTTATATGTGTATAG
 TTACCAACCTAAAAATAAAACCTGGAACAGCATACTTGAGAAGATGTAATAC
 TCAGTGCCTCCTATGGTTCTAATAGGATTTTATTATTGTTATTATTATTGGGT
 TTTTGAGACAGGGTTGGAGGGCTTTATTTCCTTGAAATAAGAACAGTGTGTT

TTAAATG

SEQ.ID.NO. 36 HG1018249N0 CLN00149041

CGGGTGCAGGGCGCCGCACTGGAAAGGAGCAGGCCCTGAGCTCGAGCGACGGCGCTGGCG
 AGACGCCGGCTGCTCCTCCCCCTCCCCCGGGATTAAATCTCTGGAGAAGACACATCCACA
 GTAGCACTTCTTCAGATGCTGACGCTCGGTGAACAGTTGCCCTGGTACAAGAGATTAA
 GAAGACACAGTGTCCATCCTCCCAGATTGGATCTCTTTCATATGGATCTCTGTGTTCT
 ATGTCTTTAAAAATAACTTTGGGAAACCTTTGAGTACAACACTGTCACTGTCATCCTCAC
 CTATGCAAAGAAAGGGAAAGCTATTGCTGGATTGGAGGAGCTTTCTAAAAGGATTGT
 ACACCTTAGAAGTGCTTAAGGAAGAGTGATGAAGATAGGCATGAAGCCTCGTCTCACAG
 CTGCATGCGTAGTCACTGTTGAAGCAAATGCCAACCTAACATTGACACTCTGGTGTGTT
 AAAAATTGGAGTTGCAAATAAGCATATTAAGTCACTGATGGAGCCTCGGGCA
 GTGAACAGTTATTGAGGACCTGATCCCTGGAGGCAAATCCCAAGATGCAAGGGCAGAA
 AGCAGACAGAAATCAGAACAAAATTGTCTAAATGACCCACAATGCTTGGAGAACATTA
 ACGTGATTGCCAAGGCTTGAAGCATCTCTCCAGCACCAGCGCAGGGAGGTCACTG
 CTCACATGATGTGAGCAAATTCAAGGAGATCCAGAACCTGAAATGGATCTGGAAAGCC
 AGAACGCATGTGCTGAGATTGATGGTCTCCCACCCACCCACAGCTCTGAATCTGTCC
 TGCAGCAGATTGAGTGCCACCCAAGATGAAGAGAGGGACAAGCTTGCTGATAGTAGGC
 GCAAGCCAGAGGCCAAAGGGAACTCCCAAATCAACAGGAAGTCTGGTCAAGGAGATGA
 CAGCTGTTATGCAGTCAGGCCAACCTGGTCTTCATCCACAACTGATGCAACCTACAGCT
 CTGCTATGATGGAAATAGCTTGTGCTGCTGCTGCTGCTGCTGATGCTCTACCAAGGAG
 AAATGCCACTGCCCGAACCTTCTGGCAAACCTCATCAACATCCTCTGGCTGTCATGGC
 AGTCTTTGGTCTTGTCTCCACTGTAAGCCAACGTGTGTTGCTCCATGAAGACCTG
 CAACAGGACGTTCAAGCACTTATTCCCTGTGGTTTATTGCTTCTGGAAAGCACTG
 GGACGCCCTTCAGCTATGTGAAAGGTTCTTCATCCCTAGATGATGCTGGCACAG
 AAGGCATTGTTCCCTACCCCTGGCAGTGCACTGAGCAGAGAGTTAGACAGCAACCTAC
 CTACTCTGAAGTTTCTACAACAAAAAAAGAGTTGAGTGAATCTGTTACATTAGAATA
 ATGTTTTTCTCAAGAGACGCAATTGCAATAGTATTGAGATTATCCAAGAAGT
 TTGGGCGAAATCTGGATCATTGATGCTGATGGTCTGGGATGCAAATC
 TTAAACAGTCCTTAATATGAAC

SEQ.ID.NO. 37 HG1018250N0 24980850:24980849

GACACAGTGTCCATCCTCCCAGATTGGATCTCTTTCATATGGATCTCTGTGTTCTATG
 TCTTTAAAAATAACTTTGGGAAACCTTTGGATTACAACCTGTCATCCTCACCTA
 TGCAAAGAAAGGGAAAGCTATTGCTGGATTGGAGCTTCTCTAAAGGATTTACA
 CCTTAGAAGTGCTTAAGGAAGAGTGATGAAGATAGGCATGAAGCCTCGTCTCACAGCTG
 CATGCGTAGTCACTGTTGAAGCAAATGCCAACCTAACATTGACACTCTGGTGTGTTAAA
 AAATTTTTGAGTTGCAAATAAGCATATTAAGTCACTGATGGAGCCTCGGGCAGTG
 AACAGTTATTGAGGACCCCTGATCCCTGGAGGCAAATCCAAGATGCAAGGGCCAGAAAGC
 AGACAGAAATCAGAACAAAATTGTCTAAATGACCCACAATGCTTGGAGAACATTAACG
 TGATTGGCCAAGGCTGAGCATCTCTCCAGCACCAGCGCAGGAGGTCACTGTC
 CACATGATGTGCAAGCAAATTCAAGGAGATCCAGAACCTGAAATGGATCTGGAAAGCCAGA
 ACGCATGTGCTGAGATTGATGGTCTCCCACCCACCCACAGCTGCAATCGTCTG
 AGCAGATTGAGTGCACCCAGATGAAGAGAGGGACAAGCTTGCTGATAGTAGGGGGGCA
 AGCCAGAGGCCAAAGGGAAAGTCCCAAATCAACAGGAAGTCTGGTCAAGGAGATGACAG
 CTGTTATGCAGTCAGGCCACCCAGGTCTTCATCCACAACTGATGCACTACCGGCTCTG
 CTATGATGGAAATAGCTTGTGCTGCTGCTGCTGCTGATGCTACCTACCGGCTCTG
 AGGAACTGCGGAGCGGATCGAACGGTGGAAAGTAAGCAGCCTGGCCAAACATCAGTG
 CAGTGGCCTCCAGTACCGATGGCAGCATCCACAGAACACTGTTGAGTGGAAACACCAAGACC
 CTCAGCGCACAAAGGCTGCCATTGCTCACCTGCAAGCAGAACAGTCTGAGCTCACAGAAC
 AAATCAAGATTGCAAAACAGGCCGGACGACAACGTTGCTGAAATACTGAAAGCTTGGCA
 ACAGTGCAGACAAACAGCAGGCCAGGCTGCCCATCAAGCAAGTCTTGGAGAAGAACCAAGA
 AATCTGCCAAACTATCCTCCAGCTGCAAAAGAAACTTGAGCACTACCAAGGAAGCTCA
 GAGAGGTAGAGCAGAAATGGGATCCCCCGGCAGCCAAAGGATGTCTCAGGGACATGCACC
 AGGGTCTGAAGGATGTAGGAGCAAAGGTGACTGGCTTCAGTGAAGGGTGTGGATAGTG
 TCAAAGGTGGTTTCCAGCTCTCCAGGCCACCCATTGCAAGCAGGCCAGGCTGTAGTCT
 CAAAGCCAGAGAGATTGCCTCACTCATCGGAACAAATTGGCAGTGCAGACAAACATCC
 CCAACCTGAAGGACTCTTAGAGGAAGGGCAAGTGGATGATGCGGGGAAGGCCTTGGGAG
 TGATTCAAACCTTCAAGTCACTGCTAGCCAAAATATGGTAGTGAAGAAGATTGTTCTAGTGC
 CTTAGGCTCAGTGGAGCCAACAGCACCACAGGGGATCGCTGTAGGAGCATCCAGCT

CCAAAACAAACACCCCTGGACATGCAGAGCTCAGGATTGATGCACTACTACATGAGAATCC
AGGAGATCCGGAAACCCAGGCCAGACTAGAGGAATCCTTGAGACTCTCAAGGAACATT
ATCAGAGGGACTATTCCTTAATAATGCAGACCTTACAGGAGGAGCGATATAGATGTGAAC
GATTGGAAGAACAGCTAAATGACCTAACAGAGCTCCACCAGAAATGAAATCTTGAACATTGA
AGCAGGAACCTGGCAAGCATGGAAGAAAAAAATCGCGTATCAGTCTATGAACGGGCCCGG
ACATCCAGGAGGCCCTGGAGGCATGCCAGACCGCCTCCAAAGATGGAGCTGCAGCAGC
AGCAGCAGCAGGTGGTGCAGCTAGAAGGGCTGGAGAAATGCCACTGCCCGAACCTCTGG
GCAAACACTCATCAACATCCTCTGGCTGTATGCCAGTCCTTTGGTCTTGTCTCCACTG
TAGCCAACGTGTGGTCCCCCTCATGAAGAGACTGCCAACAGGACCTCAGCACCTTATTCC
TTGTGGTTTATTGCCCTTCTGGAAGCACTGGGACGCCCTCTCAGCTATGTGGAAC
GGTCTTTCATCCCCTAGATGATGCTGGCACAGAAGGCATTGTCCTAACCTCTGGCG
AGTCATGCAGCAGAGAGTTAGACAGCAACTTACCTACTCTGAAGTTTCTACAACAAAAA
AAAGAGTTGAGTGAATCTGTTACATTAGAATAATGTTTTCTCAAGAGACGCAAT
TGCAATAGTATTTTAGATTTATCCAAGAAGTTTTGGGCGAAATCTGGATCATT
TTTATGTAGCATGATTTCCCTGGGATGCAATCTAAACAGTCCTTAAATATGAACCA
ACAATCTGGAGCACACCGAAGGGCAATCTAAATGTGGCTTGAAGGACTGCACTAAAACC
CACTAAAAGATGCCAAAACCTGATGAGGGCAAACCAGTTAACCTAACACCCCTGCCCTG
TCTGGGCTCATCACCTCTCCCTATCCAGACTAACTTACTGTGAATCCTACACATTC
CATGTCTGAATTGGATTGGGATTCGGGATTTCTGTTGTC

SEQ.ID.NO. 38 HG1018262N0 213349_at

GATGAGGGCAAACCACTAAACCTAACACCCCTGCCCTGCTGGGCTCATCACCTCTGGCT
ATCCCAGACTAACTTACTGTGAAATCCTACCACANATCCATGTCGAATTTCGGATTTC
GGGGTGGATTTCGTTGTCCTGGAAAGAACACATGGATCTCTGGCTTCTCACCCAAAG
TTGCCACTACGCTAATCCNGGAAGTATGNNNNCTTGAACCTGCCCTAACCTTGA
CGAGGATACAAAAGTGAAGCATCATCCCCAAAGGATCACTGCACAGTCTACTACAGT
ATTTTAAGTAGCCCTAAATACCTAAATTAAAGCAAAATCCCTGGCCGCACTTTAA
GGTTTTTATATGTGTAGTTACCAACCTAAAAAATCCGAACAGCATACTTG
AAGAATGTAATACTCAAACCTCTCAGTGTCTCCT

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- BLACK BORDERS**
- IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- FADED TEXT OR DRAWING**
- BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- SKEWED/SLANTED IMAGES**
- COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- GRAY SCALE DOCUMENTS**
- LINES OR MARKS ON ORIGINAL DOCUMENT**
- REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.